

Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of the Claims:

1. (Cancelled)

2-28. (Previously Cancelled)

29. (Previously Presented) A currency evaluation device for receiving a stack of currency bills and rapidly evaluating all the bills in the stack, said device comprising:

an input receptacle for receiving a stack of bills to be evaluated;

a single output receptacle for receiving said bills after said bills have been evaluated;

a transport mechanism for transporting said bills, one at a time, from said input receptacle to said output receptacle along a transport path;

a discriminating unit for evaluating said bills, said discriminating unit comprising two detectors positioned along said transport path between said input receptacle and said output receptacle, said detectors being disposed on opposite sides of said transport path so as to be disposed adjacent to first and second opposing surfaces of said bills, said discriminating unit counting and determining the denomination of said bills, wherein the discriminating unit is adapted to determine the denomination of U.S. currency bills; and

means for flagging a bill when the denomination of said bill is not determined by said discriminating unit.

30. (Previously Presented) A currency evaluation device for receiving a stack of currency bills and rapidly evaluating all the bills in the stack, said device comprising:

an input receptacle for receiving a stack of bills to be evaluated;

a single output receptacle for receiving said bills after said bills have been evaluated;

a transport mechanism for transporting said bills, one at a time, from said input receptacle to said output receptacle along a transport path;

a discriminating unit for evaluating said bills, said discriminating unit comprising two detectors positioned along said transport path between said input receptacle and said output

receptacle, said detectors being disposed on opposite sides of said transport path so as to be disposed adjacent to first and second opposing surfaces of said bills, said discriminating unit counting and determining the denomination of said bills; and

means for flagging a bill when the denomination of said bill is not determined by said discriminating unit;

wherein the input receptacle is adapted to receive a stack of bills having a plurality of denominations and the discriminating unit is adapted to determine the denomination of bills having a plurality of denominations.

31. (Previously Presented) The currency evaluation device of claim 30 wherein the discriminating unit is adapted to determine the denomination of currency bills having the same dimensions.

32. (Previously Presented) The currency evaluation device of claim 30 wherein the input receptacle is adapted to receive a stack of bills having a plurality of U.S. currency denominations and the discriminating unit is adapted to determine the denomination of bills having a plurality of U.S. currency denominations.

33. (Previously Presented) The currency evaluation device of claim 32 wherein said transport mechanism transports bills at a rate of at least about 800 bills per minute.

34. (Previously Presented) The currency evaluation device of claim 32 wherein said transport mechanism transports bills at a rate of at least about 1000 bills per minute.

35. (Previously Presented) A currency evaluation device for receiving a stack of currency bills and rapidly evaluating all the bills in the stack, said device comprising:

an input receptacle for receiving a stack of bills to be evaluated;

a single output receptacle for receiving said bills after said bills have been evaluated;

a transport mechanism for transporting said bills, one at a time, from said input receptacle to said output receptacle along a transport path;

a discriminating unit for evaluating said bills, said discriminating unit comprising two detectors positioned along said transport path between said input receptacle and said output receptacle, said detectors being disposed on opposite sides of said transport path so as to be

disposed adjacent to first and second opposing surfaces of said bills, said discriminating unit counting and determining the denomination of said bills; and

means for flagging a bill when the denomination of said bill is not determined by said discriminating unit;

wherein said means for flagging causes said transport mechanism to halt with said bill whose denomination has not been determined being the last bill transported to said output receptacle;

wherein said transport mechanism transports bills at a rate of at least about 800 bills per minute; and

wherein the input receptacle is adapted to receive a stack of bills having a plurality of denominations and the discriminating unit is adapted to determine the denomination of bills having a plurality of denominations.

36. (Previously Presented) The currency evaluation device of claim 35 wherein the optical scanning head scans each bill using reflected light.

37. (Previously Presented) The currency evaluation device of claim 35 wherein the discriminating unit is adapted to determine the denomination of currency bills having the same dimensions.

38. (Previously Presented) The currency evaluation device of claim 35 wherein the input receptacle is adapted to receive a stack of bills having a plurality of U.S. currency denominations and the discriminating unit is adapted to determine the denomination of bills having a plurality of U.S. currency denominations.

39. (Previously Presented) A currency evaluation device for receiving a stack of currency bills and rapidly evaluating all the bills in the stack, said device comprising:

an input receptacle for receiving a stack of bills to be evaluated;

a single output receptacle for receiving said bills after said bills have been evaluated;

a transport mechanism for transporting said bills, one at a time, from said input receptacle to said output receptacle along a transport path;

a discriminating unit for evaluating said bills, said discriminating unit comprising two detectors positioned along said transport path between said input receptacle and said output

receptacle, said detectors being disposed on opposite sides of said transport path so as to be disposed adjacent to first and second opposing surfaces of said bills, said discriminating unit counting and determining the denomination of said bills; and

means for flagging a bill when the denomination of said bill is not determined by said discriminating unit;

wherein said means for flagging causes said transport mechanism to halt with said bill whose denomination has not been determined being the last bill transported to said output receptacle;

wherein said transport mechanism transports bills at a rate of at least about 800 bills per minute; and

wherein the discriminating unit is adapted to determine the denomination of U.S. currency bills.

40. (Previously Presented) A document evaluation device for receiving a stack of documents and rapidly evaluating all the documents in the stack, said device comprising:

an input receptacle for receiving a stack of documents to be evaluated, genuine ones of said documents each having one of a plurality of images thereon, said plurality of images defining a plurality of document types;

a single output receptacle for receiving said documents after said documents have been evaluated;

a transport mechanism for transporting said documents, one at a time, from said input receptacle to said output receptacle along a transport path;

a discriminating unit for evaluating said documents, said discriminating unit comprising two detectors positioned along said transport path between said input receptacle and said output receptacle, said detectors being disposed on opposite sides of said transport path so as to be disposed adjacent to first and second opposing surfaces of said documents, said discriminating unit being capable of distinguishing among said plurality of document types by scanning the image on each of said documents, said discriminating unit counting and determining the document type of said documents; and

means for flagging a document when the type of said document is not determined by said discriminating unit;

wherein the discriminating unit is adapted to determine the denomination of U.S. currency bills.

41-46. (Cancelled)

47. (Currently Amended) A method of counting and discriminating currency bills of different denominations using a currency evaluation device comprising the acts of:

receiving a stack of bills to be evaluated in an input receptacle of the evaluation device; transporting, under control of the evaluation device, the bills, one at a time, from the input receptacle to a single output receptacle of the evaluation device along a transport path;

counting and determining the denomination of the bills under control of the evaluation device using a denomination discriminating unit comprising two detectors positioned along the transport path and disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills; and

flagging a bill when the denomination of the bill can not be determined under control of the evaluation device.

48. (Currently Amended) The method of claim 47 wherein the act of flagging a bill comprises the act of halting the transporting of the bills in the stack with the bill whose denomination has not been determined being the last bill transported to the output receptacle.

49. (Currently Amended) The method of claim 48 wherein the acts of transporting and determining the denomination of bills ~~is~~ are performed at a rate of at least about 1000 bills per minute.

50. (Currently Amended) The method of claim 48 wherein the act of determining the denomination of the bills comprises the acts of scanning by the detectors at least a preselected segment of each side of each bill transported between the input and output receptacles, and producing output signals representing the scanned images.

51. (Currently Amended) The method of claim 50 the acts of scanning comprises the act of detecting reflected light.

52. (Currently Amended) The method of claim 51 wherein the acts of transporting and determining the denomination of bills ~~is~~ are performed at a rate of at least about 800 bills per minute.

53. (Currently Amended) The method of claim 52 further comprising the act of removing, under the control of an operator of the evaluation device, the bill whose denomination has not been determined from the evaluation device after the act of transporting has been halted.

54. (Previously Presented) The method of claim 52 wherein the stack of bills received in the input receptacle have a plurality of U.S. currency denominations and the discriminating unit determines the denomination of bills having a plurality of U.S. currency denominations.

55. (Currently Amended) The method of claim 47 wherein the act of determining the denomination of the bills comprises the acts of scanning by the detectors at least a preselected segment of each side of each bill transported between the input and output receptacles, and producing an output signal representing the scanned images.

56. (Currently Amended) The method of claim 47 wherein the acts of transporting and determining the denomination of bills ~~is~~ are performed at a rate of at least about 800 bills per minute.

57. (Currently Amended) The method of claim 47 wherein the acts of transporting and determining the denomination of bills ~~is~~ are performed at a rate of at least about 1000 bills per minute.

58. (Previously Presented) The method of claim 57 wherein the stack of bills received in the input receptacle have a plurality of U.S. currency denominations and the discriminating unit determines the denomination of bills having a plurality of U.S. currency denominations.

59. (Currently Amended) The method of claim 47 wherein the act of flagging comprises the act of halting the transporting of bills.

60. (Currently Amended) The method of claim 59 further comprising the act of removing, under the control of an operator of the evaluation device, the bill whose denomination has not been determined from the evaluation device after the act of transporting has been halted.

61. (Currently Amended) The method of claim 60 further comprising the act of resuming transporting bills after the bill whose denomination has not been determined has been removed from the evaluation device.

RE
62-67. (Cancelled)

68. (New) A currency evaluation device adapted to receive a stack of currency bills and rapidly evaluate all the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of bills to be evaluated;

a single output receptacle positioned to receive bills after the bills have been evaluated;

a transport mechanism comprising a drive motor and rollers and being adapted to transport bills, one at a time, from the input receptacle to the output receptacle along a transport path at a rate of at least about 800 bills per minute;

a discriminating unit comprising two detectors positioned along the transport path between the input receptacle and the output receptacle and further comprising a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, the detectors generating characteristic information output signals in response to detected characteristic information, the characteristic information output signals being electrically coupled to the processor, the processor receiving the characteristic information output signals and generating a denomination signal in response thereto, the discriminating unit being adapted to determine the denomination of U.S. currency bills; and

means for flagging a bill when the denomination of the bill is not determined by the discriminating unit.

69. (New) A currency evaluation device for receiving a stack of currency bills and rapidly evaluating all the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of bills to be evaluated;

a single output receptacle positioned to receive bills after the bills have been evaluated;

a transport mechanism comprising a drive motor and rollers for transporting the bills, one at a time, from the input receptacle to the output receptacle along a transport path at a rate of at least about 800 bills per minute; and

a discriminating unit comprising two detectors positioned along the transport path between the input receptacle and the output receptacle and further comprising a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, the detectors generating characteristic information output signals in response to detected characteristic information, the characteristic information output signals being electrically coupled to the processor, the processor receiving the characteristic information output signals and generating a denomination signal in response thereto, the discriminating unit counting and determining the denomination of the bills, wherein the discriminating unit is adapted to determine the denomination of U.S. currency bills by comparing the information derived from at least one of the characteristic information output signals with stored master information corresponding to a plurality of U.S. currency denominations; and

a flagging device comprising the processor and an encoder linked to the transport mechanism, the encoder producing tracking signals in response to the physical movement of the bills, the processor generating a no call signal when the denomination of a bill is not determined by the processor, wherein the processor is coupled to the transport mechanism and is programmed to cause the transport mechanism to halt when the denomination of a bill is not determined by the processor.

70. (New) The currency evaluation device of claim 69 wherein the processor is programmed to cause the transport mechanism to halt with the bill whose denomination has not been determined being located at a predetermined position.

71. (New) The currency evaluation device of claim 69 wherein the processor is programmed to cause the transport mechanism to halt with the bill whose denomination has not been determined being the last bill transported to the single output receptacle.

72. (New) The currency evaluation device of claim 69 wherein bills of at least two of the plurality of denominations have the same size and the discriminating device is adapted to denominate bills of the plurality of denominations including bills of different denominations having the same size.

73. (New) The currency evaluation device of claim 69 wherein the discriminating unit is adapted to denominate bills independently of the size of the bills.

74. (New) A currency evaluation device for receiving a stack of currency bills and rapidly evaluating all the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of bills to be evaluated;

a single output receptacle positioned to receive the bills after the bills have been evaluated;

a transport mechanism comprising a transport drive motor and transport rollers, the transport mechanism located between the input receptacle and the output receptacle to transport the bills, one at a time, from the input receptacle to the output receptacle along a transport path;

a discriminating unit comprising two image detectors positioned along the transport path between the input receptacle and the output receptacle, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, and comprising a processor, the detectors generating image characteristic information output signals in response to detected characteristic information, the image characteristic information output signals being electrically coupled to the processor, the processor receiving the image characteristic information output signals and generating a denomination signal in response thereto; and

a flagging device comprising the processor and an encoder linked to the transport mechanism, the encoder producing tracking signals in response to the physical movement of the bills, the processor generating a no call signal when the denomination of a bill is not determined by the processor.

75. (New) A high-speed U.S. currency evaluation device for receiving a stack of U.S. currency bills and rapidly evaluating all the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of bills to be evaluated;

at least one output receptacle positioned to receive bills after evaluation;

a transport mechanism comprising a transport drive motor and transport rollers, the transport mechanism being located between the input receptacle and the output receptacle and being adapted to transport the bills, one at a time, from the input receptacle to the output receptacle along a transport path, the transport mechanism being adapted to transport bills at a rate in excess of about 800 bills per minute; and

P-2
a denomination discriminating unit comprising two detectors, positioned along the transport path between the input receptacle and the output receptacle, and a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, the detectors generating characteristic information output signals in response to detected characteristic information, the characteristic information output signals being electrically coupled to the processor, the processor receiving the characteristic information output signals and generating a denomination signal in response thereto, the discriminating unit being adapted to denominating and total bills of a plurality of U.S. denominations at a rate in excess of about 800 bills per minute;

wherein the device is adapted to deliver any bill that has been successfully evaluated and totaled to one and only one of the at least one output receptacle.

76. (New) A method of processing currency using a U.S. currency denominating device comprising the acts of:

receiving a stack of bills having a plurality of U.S. denominations to be denominating in an input receptacle of the device;

transporting the bills, one at a time, from the input receptacle along a transport path at a rate of at least about 800 bills per minute using a transport mechanism comprising a transport drive motor and transport rollers;

determining the denomination of bills including bills of a plurality of U.S. denominations at a rate of at least about 800 bills per minute using a discriminating unit comprising two detectors positioned along the transport path and a processor, the detectors

being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills; wherein the act of determining the denomination comprises the acts of:

the detectors detecting characteristic image information from the bills;

the detectors generating characteristic image information output signals in response to detected characteristic information, the characteristic image information output signals being electrically coupled to the processor;

the processor receiving the characteristic image information output signals;

and

the processor generating a denomination signal in response thereto; and

delivering bills that have been denominated to a single denominated bill output receptacle of the device.

77. (New) The method of claim 76 further comprising the act of flagging a bill when the denomination of the bill can not be determined under the control of the device.

78. (New) The method of claim 77 wherein the act of flagging comprises the act of diverting a bill whose denomination is not determined to a stacker bin separate from the denominated bill output receptacle.

79. (New) The method of claim 77 wherein the act of flagging comprises the act of halting the act of transporting of the bills when the denomination of a bill is not determined by the discriminating unit.

80. (New) The method of claim 79 wherein the act of flagging comprises the act of halting the act of transporting with the bill whose denomination has not been determined being located at a predetermined position.

81. (New) The method of claim 80 wherein the act of flagging comprises the act of halting the act of transporting with the bill whose denomination has not been determined being located at a predetermined position in an output receptacle.

82. (New) The method of claim 79 wherein the act of flagging comprises the act of halting the act of transporting of the bills in the stack with the bill whose denomination has not been determined being the last bill transported to an output receptacle.

83. (New) The method of claim 82 further comprising the act of removing the bill whose denomination has not been determined from the output receptacle before said transport mechanism is restarted.

84. (New) A U.S. currency evaluation device for receiving a stack of U.S. currency bills and rapidly evaluating all the bills in the stack, the device comprising:

an input receptacle adapted to receive a stack of U.S. bills of a plurality of denominations, the bills having a narrow dimension;

a transport mechanism positioned to transport the bills, one at a time, from the input receptacle along a transport path in a transport direction, the transport mechanism being positioned to transport bills at a rate in excess of 800 bills per minute with their narrow dimension parallel to the transport direction;

a denomination discriminating unit adapted to determine the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute, the discriminating unit comprising two detectors positioned along the transport path, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, wherein the detectors are positioned to receive light reflected off passing bills and the detectors are adapted to generate reflected light characteristic information output signals in response to detected characteristic information, the reflected light characteristic information output signals being electrically coupled to a processor, the processor receiving the reflected light characteristic information output signals and generating a denomination signal in response thereto;

a single denominated bill output receptacle positioned to receive bills whose denomination have been determined by the discriminating unit including bills of a plurality of denominations;

a separate stacker bin adapted to receive bills that the device is not capable of denominating, the stacker bin being separate from the denominated bill output receptacle; and

a diverter positioned along the transport path to route bills which are denominated by the denomination discriminating unit to the denominated bill output receptacle and bills

whose denomination are not determined by the denomination discriminating unit to the separate stacker bin.

85. (New) A U.S. currency denominating device for receiving a stack of U.S. currency bills and rapidly evaluating the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of U.S. currency bills of a plurality of denominations to be evaluated, the bills having a narrow dimension;

RU
a transport mechanism comprising a transport drive motor and transport rollers, the transport mechanism being adapted to transport the bills, one at a time, from the input receptacle along a transport path in a transport direction, the transport mechanism being adapted to transport bills at a rate in excess of 800 bills per minute with their narrow dimension parallel to the transport direction;

a denomination discriminating unit adapted to determine the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute, the bills the discriminating unit is adapted to denominates having images associated therewith corresponding to the plurality of denominations that the discriminating unit is adapted to denominates, the discriminating unit comprising two detectors positioned along the transport path, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, the detectors being adapted to scan opposing surfaces of passing bills and generate image signals, the discriminating unit determining the denomination of bills based on the image signals;

a single denominated bill output receptacle for receiving bills whose denomination have been determined by the discriminating unit including bills of a plurality of denominations;

a separate stacker bin adapted to receive bills whose denomination have not been determined by the discriminating unit, the stacker bin being separate from the denominated bill output receptacle; and

a diverter positioned along the transport path to route bills which are denominates by the denomination discriminating unit to the denominated bill output receptacle and bills whose denomination have not been determined by the discriminating unit to the separate stacker bin.